

Quadrant[®]

VALVE & ACTUATOR, LLC



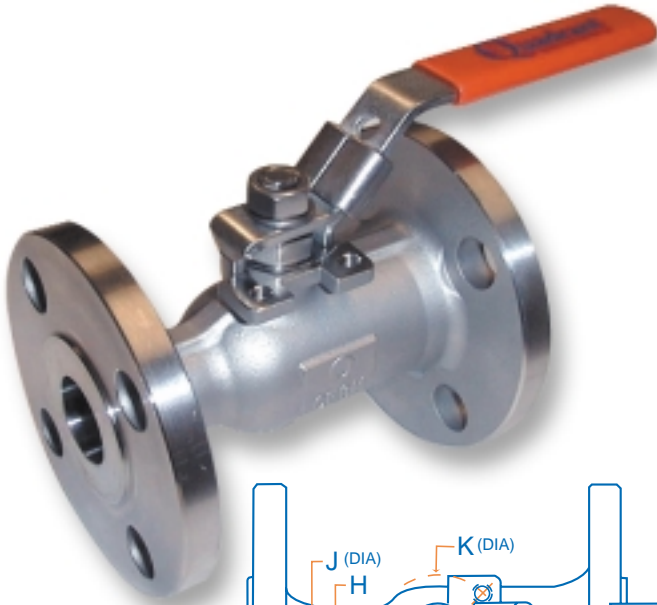
SERIES F1-CS & F1-SS

Unibody Flanged-End Ball Valves
Class 150 & 300

Quadrant
ASME B16.34/
BALL/STEM
MATERIAL: TFM4
CLASS 150
150PSIG
195PSIG

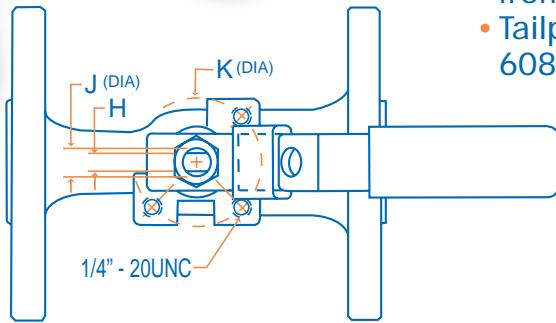


Series F1-CS & F1-SS ASME B16.34 & API 608 Class 150 & 300 Unibody Flanged-End Ball Valves 1/2" - 1" Sizes



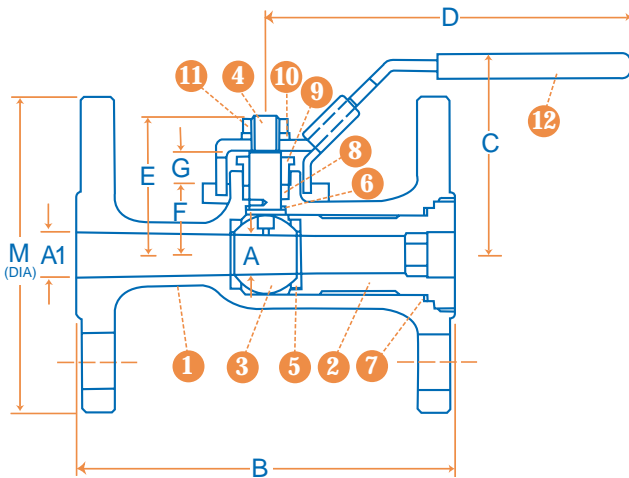
FEATURES

- Fully compliant to ASME B16.34 and API 608
- Fire safe to API 607 4th Edition & ISO 10497
- ISO 5211 actuator mounting pads
- NACE MR01-75 Revision 2003 compliant
- Standard 304SS latch lock handles
- "Extended" packing nuts for easy access when automated
- Electrically grounded ball and stem
- TFM seats provide superior high temperature performance and chemical resistance
- Tailpiece gasket positioned to isolate threads from line fluid
- Tailpiece-to-body connection complies with API 608 and ISO 17292



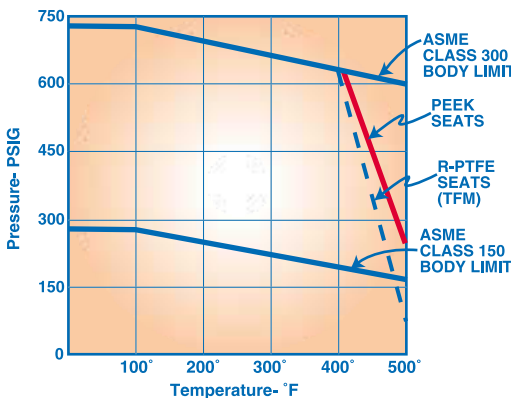
RATINGS

**Class 150: WCB rated at 285PSIG @ 100°F
CF8M rated at 275PSIG @ 100°F**
**Class 300: WCB rated at 740PSIG @ 100°F
CF8M rated at 720PSIG @ 100°F**
250PSIG Saturated Steam Rating-All TFM Seated Valves



MATERIALS OF CONSTRUCTION (STD)

PART	QTY.	DESCRIPTION	STANDARD MATERIAL
1	1	BODY	ASTM A216 GR WCB or A351 GR CF8M
2	1	INSERT	ASTM A216 GR WCB or A351 GR CF8M
3	1	BALL	ASTM A276 GR 316 SS / A351 GR CF8M
4	1	STEM	ASTM A276 GR 316 SS
5	2	SEAT	TFM (R-PTFE)
6	1	THRUST WASHER	TFM (R-PTFE)
7	1	BODY SEAL	GRAPHITE
8	2	STEM PACKING	GRAPHITE
9	1	PACKING NUT	ASTM A276 GR 316 SS
10	1	LOCK WASHER	304 SS
11	1	HANDLE NUT	304 SS
12	1	HANDLE ASSY	304 SS - VINYL COATED
NOT SHOWN	2	GROUNDING SPRING	304 SS
NOT SHOWN	2	GROUNDING BALL	304 SS



DIMENSIONS, WEIGHTS, CV FACTORS & MAXIMUM OPERATING TORQUES CLASS 150

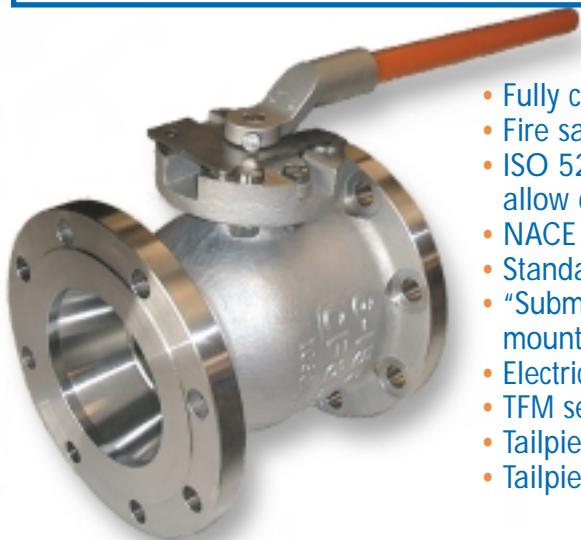
SIZE	A (PORT)	A1 (DIA)	B	C	D	E	F	G	H	J (DIA)	K (DIA)	M (DIA)	ISO PATTERN	WT. LBS	CV	TORQUE (IN-LB)-TFM SEATS
1/2"	0.43	.50	4.25	2.3	5.1	1.53	.78	.350	.20	.31	1.42	3.50	F03	2.7	16	100
3/4"	0.59	.75	4.62	2.8	5.8	2.06	1.03	.425	.28	.44	1.65	3.88	F04	4.3	27	130
1"	0.81	1.0	5.00	2.9	5.8	2.33	1.33	.402	.28	.44	1.65	4.25	F04	5.7	42	150

CLASS 300

SIZE	A (PORT)	A1 (DIA)	B	C	D	E	F	G	H	J (DIA)	K (DIA)	M (DIA)	ISO PATTERN	WT. LBS	CV	TORQUE (IN-LB)-TFM SEATS
1/2"	0.43	.50	5.50	2.3	5.1	1.53	.78	.350	.20	.31	1.42	3.75	F03	4.7	16	100
3/4"	0.59	.75	6.00	2.8	5.8	2.06	1.03	.425	.28	.44	1.65	4.62	F04	7.2	27	130
1"	0.81	1.0	6.50	2.9	5.8	2.33	1.33	.402	.28	.44	1.65	4.88	F04	8.1	42	150



Series F1-CS & F1-SS ASME B16.34 & API 608 Class 150 & 300 Unibody Flanged-End Ball Valves 1-1/2" - 6" Sizes

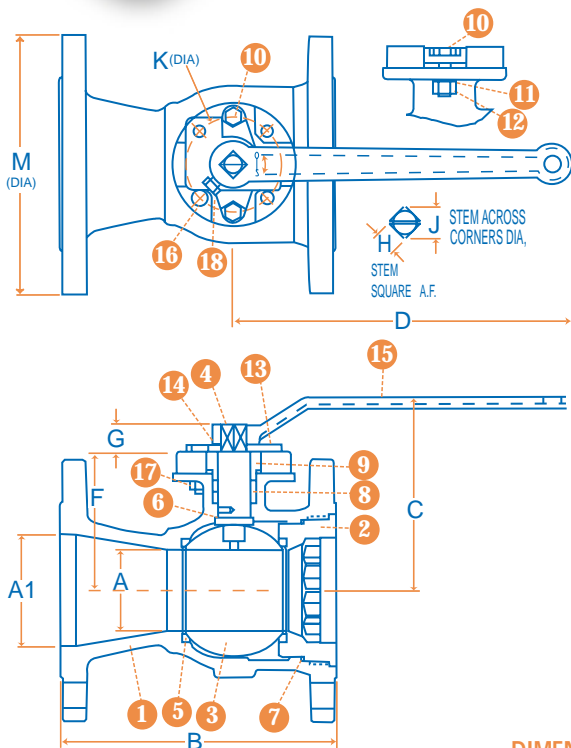


FEATURES

- Fully compliant to ASME B16.34 and API 608
- Fire safe to API 607 4th Edition & ISO 10497
- ISO 5211 actuator mounting pads & patented "Square Drive" stem design allow direct mounting of ISO operators without brackets and/or adaptors
- NACE MR01-75 Revision 2003 compliant
- Standard stainless locking handles, 1-1/2" to 3", locking handles, 4" & 6"
- "Submerged" packing adjustment allows packing to be adjusted when mounted with ISO-compliant gear operators & actuators
- Electrically grounded ball and stem
- TFM seats provide superior high temp performance & chemical resistance
- Tailpiece gasket positioned to isolate threads from line fluid
- Tailpiece-to-body connection complies with API 608 & ISO 17292

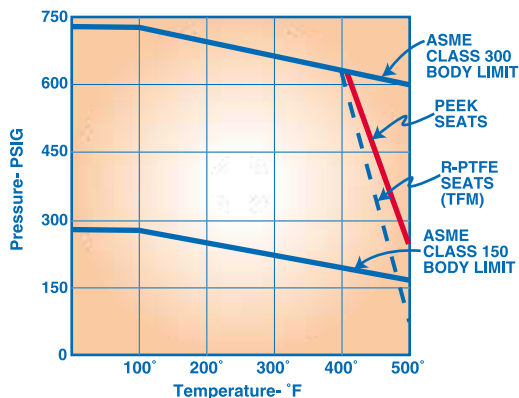
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3	1	BALL	ASTM A276 GR 316 SS / A351 GR CF8M
4	1	STEM	ASTM A276 GR 316 SS
5	2	SEAT	TFM (R-PTFE)
6	1	THRUST WASHER	TFM (R-PTFE)
7	1	BODY SEAL	GRAPHITE
8	2	STEM PACKING	GRAPHITE
9	1	PACKING PLATE	ASTM A351 GR CF8M
10	2	PACKING BOLT	ASTM A193 GR B8
11	4	BELLEVILLE WASHER	300 SERIES SS
12	2	PACKING NUT	ASTM A194 GR 8
13	1	STOP PLATE	304 SS
14	1	SNAP RING	300 SERIES SS
15	1	HANDLE ASSY	ASTM A351 GR CF8M (w/CS PIPE-4"/6")
16	1	STOP PIN	304 SS
17	1	STOP PIN NUT	304 SS
18	1	HANDLE BOLT	304 SS
NOT SHOWN	2	GROUNDING SPRING	304 SS
NOT SHOWN	2	GROUNDING BALL	304 SS



DIMENSIONS, WEIGHTS, CV FACTORS & MAXIMUM OPERATING TORQUES - CLASS 150

SIZE	A (PORT)	A1 (DIA)	B	C	D	F	G	H (SQUARE)	J (DIA)	K (DIA)	M (DIA)	ISO (PATTERN)	WT. LBS	CV	TORQUE (IN-LB) TFM SEATS
1-1/2"	1.25	1.50	6.50	4.1	10.0	2.55	.73	14MM	.74	2.76	5.0	F07	12.5	100	250
2"	1.50	2.00	7.00	4.8	10.0	3.07	.76	14MM	.74	2.76	6.0	F07	18.5	145	400
2-1/2"	2.00	2.50	7.50	5.4	10.0	3.60	.76	14MM	.74	2.76	7.0	F07	29.0	280	475
3"	2.31	3.00	8.00	5.9	10.0	4.16	.76	14MM	.74	2.76	7.5	F07	33.0	420	550
4"	3.00	4.00	9.00	7.0	18.5	4.87	.89	17MM	.89	4.02	9.0	F10	61.0	605	1000
6"	4.51	6.00	10.50	8.5	18.5	6.50	.89	17MM	.89	4.02 & 4.92	11.0	F10 & F12	99.0	900	1600

DIMENSIONS, WEIGHTS, CV FACTORS & MAXIMUM OPERATING TORQUES - CLASS 300

SIZE	A (PORT)	A1 (DIA)	B	C	D	F	G	H (SQUARE)	J (DIA)	K (DIA)	M (DIA)	ISO (PATTERN)	WT. LBS	CV	TORQUE (IN-LB) TFM SEATS
1-1/2"	1.25	1.50	7.50	4.8	10.0	2.55	.73	14MM	.74	2.76	6.12	F07	20.0	100	250
2"	1.50	2.00	8.50	5.2	10.0	3.40	.76	14MM	.74	2.76	6.50	F07	27.0	145	400
3"	2.31	3.00	11.12	5.9	16.0	4.16	.76	14MM	.74	2.76	8.25	F07	47.5	420	550
4"	3.00	4.00	12.00	7.3	18.5	5.12	.89	17MM	.89	4.02	10.0	F10	77.0	605	1000
6"	4.51	6.00	15.88	8.5	18.5	6.50	.89	17MM	.89	4.02 & 4.92	12.5	F10 & F12	119.0	900	1600

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VALVE & ACTUATOR, LLC

SERIES F1-CS & F1-SS

NUMBERING SYSTEM ... HOW TO ORDER:

F1 R C S R G LH 1F 200

SERIES	PORT SIZE	BODY & TAILPIECE MATERIAL	BALL/STEM MAT'L	SEAT MAT'L	SEAL MAT'L	HANDLE TYPE	ENDS	SIZE
F1 = UNIBODY FLANGED	R = REDUCED	C = WCB CARBON STEEL S = CF8M STAINLESS STEEL A = CN7M ALLOY 20 M = MONEL I = INCONEL H = HASTELLOY	S = 316 SS A = ALLOY 20 H = HASTELLOY M = MONEL I = NICKEL	R = TFM (RTFE) P = PEEK U = UHMW V = VIRGIN PTFE	G = GRAPHITE R = TFM (RTFE) V = VIRGIN PTFE U = UHMW	LH = LOCKING LEVER (SS TO 3") SL = STAINLESS LATCH LOCK (STD. on 1/2" to 1") LO = LOCKING STAINLESS OVAL (1/2" to 1") PA = DOUBLE ACTING PNEUMATIC SA = SPRING RETURN PNEUMATIC SR = DEADMAN HANDLE (1/2" to 1") GO = GEAR OPERATED	1F = CLASS 150 RF 3F = CLASS 300 RF FF = CLASS 150 FLAT FACE	050 = 1/2" 075 = 3/4" 100 = 1" 150 = 1-1/2" 200 = 2" 250 = 2-1/2" 300 = 3" 400 = 4" 600 = 6" 800 = 8"



1" F1 with 304SS Locking Oval Handle

2" F1 with C-Series Pneumatic Actuator



6" F1 with Quadrant Gear Operator